

MATERIAL SAFETY DATA SHEET**LIQUID CARBONIC**

INDUSTRIAL/MEDICAL CORPORATION

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LIQUID OXYGEN

04/86

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SECTION I—PRODUCT IDENTIFICATION

CHEMICAL NAME: Oxygen

COMMON NAME AND SYNONYMS: Liquid Oxygen, LOX

CHEMICAL FAMILY: Oxidizer

FORMULA: O₂**SECTION II—HAZARDOUS INGREDIENTS**

MATERIAL	VOLUME %	CAS NO.	1985-6 ACGIH TLV UNITS
Oxygen	99.5	7782-44-7	None

SECTION III—PHYSICAL DATA

BOILING POINT (°F.)	-297°F	SPECIFIC GRAVITY (H ₂ O=1)	1.14 @ B.P.
VAPOR PRESSURE (mmHg.)	@-297°F-760	% VOLATILE BY VOLUME	100.0
VAPOR DENSITY (AIR=1)	1.105	EVAPORATION RATE (BUTYL ACETATE=1)	N/A
SOLUBILITY IN WATER	Slight		
APPEARANCE AND ODOR	Colorless, odorless		

SECTION IV—FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	N/A	FLAMMABLE LIMITS	LEL N/A	UEL N/A
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EXTINGUISHING MEDIA: Large quantities of water, carbon dioxide less effective.

SPECIAL FIRE FIGHTING PROCEDURES: Remove source of oxygen which aids combustion. Keep storage equipment cool. Fight fire according to materials involved.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Strong oxidizer, vigorously reacts with hydrocarbons and organic materials. Containers may rupture violently if safety devices fail to relieve pressure.

SECTION V—HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: None specified.

EFFECTS OF OVEREXPOSURE: Breathing high concentrations (over 75% by volume) causes symptoms of hyperoxia including cramps, nausea, dizziness, hypothermia, amblyopia, respiratory difficulties, fainting, convulsions, capable of leading to death.

EMERGENCY AND FIRST AID PROCEDURES: Advise physician of hyperoxia. Prompt medical attention is mandatory in cases of over-exposure. Remove to area with fresh air and assist respiration. For skin contact or frost bite, flush affected area with luke warm water. Do not use hot water. For serious cryogenic burn, see a physician immediately.

ROUTE(S) OF ENTRY: INHALATION? Yes SKIN? Yes INGESTION?

CARCINOGENICITY NTP? No IARC MONOGRAPHS? No OSHA? No

SECTION VI--REACTIVITY DATA

STABILITY: UNSTABLE () STABLE (X)

CONDITIONS TO AVOID: N/A

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid hydrocarbons and organic materials.

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: MAY OCCUR () WON'T OCCUR (X)

CONDITIONS TO AVOID: N/A

SECTION VII--SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Attempt to stop source of release. Evacuate all personnel from affected area. Use appropriate protective equipment. Remove sources of heat or ignition. Ventilate area.

WASTE DISPOSAL METHOD: No disposal problem, gas will diffuse into atmosphere.

SECTION VIII--SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: Not required.

VENTILATION: LOCAL EXHAUST (X) Prevent oxygen concentration over 25%.
MECHANICAL (GENERAL) ()

PROTECTIVE GLOVES: Loose-fitting, insulated.

EYE PROTECTION: Safety goggles or glasses plus face shield.

OTHER PROTECTIVE EQUIPMENT: Safety shoes.

SECTION IX--SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Do not store near combustible materials or in hot locations. Protect from physical damage, store in cool well-ventilated locations. Oxygen is an oxidizing gas. Vigorously accelerates combustion. Keep oil, grease and hydrocarbons away. Follow safety instructions.

OTHER PRECAUTIONS: Oxygen equipment must be cleaned and degreased for oxygen service. Use only DOT and ASME coded storage containers. Refer to CGA Bulletin SB-2, pamphlet G.4.1, p-12, and p-14.

- SB-2 -- "Oxygen Deficient Atmosphere"
- G-4.1 -- "Cleaning Equipment for Oxygen Service"
- P-12 -- "Safe Handling of Cryogenic Liquids"
- P-14 -- "Accident Prevention in Oxygen - Rich
and Oxygen - Deficient Atmospheres"

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